

09/638,063 qd7

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3105469	@ad<"20000815"	US-PGPUB; USPAT	OR	ON	2005/02/11 11:29
L3	2	("6519412").URPN.	USPAT	OR	ON	2005/02/11 12:11
L4	1343	(computer with docking) and 1	USPAT	OR	ON	2005/02/11 12:11
L5	326	(computer with docking).ti,ab. and 1	US-PGPUB; USPAT	OR	ON	2005/02/11 13:36
L6	175	(computer with docking).ti. and 1	US-PGPUB; USPAT	OR	ON	2005/02/11 12:11
L7	2	(computer with docking).ti. and 1 and identification.ti,ab.	US-PGPUB; USPAT	OR	ON	2005/02/11 12:12
L8	53	("5826043").URPN.	USPAT	OR	ON	2005/02/11 12:14
L9	0	("6449579").URPN.	USPAT	OR	ON	2005/02/11 12:16
L10	14	("3875478"   "5136466"   "5138529"   "5163833"   "5184961"   "5333177"   "5398156"   "5488572"   "5535274"   "5668699"   "5691504"   "5826043"   "6295567"   "6301124").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2005/02/11 12:16
L11	53	("5826043").URPN.	USPAT	OR	ON	2005/02/11 12:23



L16	176	(restaurant).ti. and 1	US-PGPUB; USPAT	OR	ON	2005/02/11 12:25
L17	30	(restaurant).ti. and 1 and ordering	US-PGPUB; USPAT	OR	ON	2005/02/11 13:43
L18	18	(US-6341268-\$ or US-D433438-\$ or US-6088681-\$ or US-6087927-\$ or US-5969968-\$ or US-5937386-\$ or US-5907275-\$ or US-5839115-\$ or US-5838798-\$ or US-5128862-\$ or US-5113970-\$ or US-5018066-\$ or US-4800438-\$ or US-4547851-\$ or US-4530067-\$ or US-4518821-\$ or US-4516016-\$ or US-4074793-\$). did.	USPAT	OR	ON	2005/02/11 13:35
L19	8	17 and 18 and (identification or identify)	US-PGPUB; USPAT	OR	ON	2005/02/11 12:30
L20	2	(restaurant with ordering with (identify or identification)) and 1	US-PGPUB; USPAT	OR	ON	2005/02/11 13:34
L21	1	("6,212,625").PN.	US-PGPUB; USPAT	OR	OFF	2005/02/11 13:34
L22	1	("6,212,265").PN.	US-PGPUB; USPAT	OR	OFF	2005/02/11 13:47
L23	0	(US-6341268-\$ or US-D433438-\$ or US-6088681-\$ or US-6087927-\$ or US-5969968-\$ or US-5937386-\$ or US-5907275-\$ or US-5839115-\$ or US-5838798-\$ or US-5128862-\$ or US-5113970-\$ or US-5018066-\$ or US-4800438-\$ or US-4547851-\$ or US-4530067-\$ or US-4518821-\$ or US-4516016-\$ or US-4074793-\$). did. and (email or "electronic mail")	USPAT	OR	ON	2005/02/11 13:35
L24	0	(US-6341268-\$ or US-D433438-\$ or US-6088681-\$ or US-6087927-\$ or US-5969968-\$ or US-5937386-\$ or US-5907275-\$ or US-5839115-\$ or US-5838798-\$ or US-5128862-\$ or US-5113970-\$ or US-5018066-\$ or US-4800438-\$ or US-4547851-\$ or US-4530067-\$ or US-4518821-\$ or US-4516016-\$ or US-4074793-\$). did. and (e-mail or "electronic mail")	USPAT	OR	ON	2005/02/11 13:35
L25	55230	(computer with docking).ti,ab. and 1and ("e-mail" or "email" or "electronic mail")	US-PGPUB; USPAT	OR	ON	2005/02/11 13:36
L26	31	(computer with docking).ti,ab. and 1 and ("e-mail" or "email" or "electronic mail")	US-PGPUB; USPAT	OR	ON	2005/02/11 13:40
L27	16	(computer with alarm and remov\$). ti,ab. and 1	US-PGPUB; USPAT	OR	ON	2005/02/11 13:40

L28	2	(restaurant).ti. and 1 and ("e-mail" or "email" or "electronic mail")	US-PGPUB; USPAT	OR	ON	2005/02/11 13:45
L29	30	("20030088469" "5003472" "5838798" "20020077843" "20020032667" "20010047301" "6366196" "6088681" "6019393" "5845263" "5839115" "5272474" "5128862" "5018066" "4935720" "4800438" "4722053" "4701849" "4582172" "4553222" "4547851" "4530067" "4415065" "4388689" "4222111" "4074793" "4128757" "3310797" "3304416" "3267436").PN.	US-PGPUB; USPAT	OR	ON	2005/02/11 13:44
L30	10	("6646659" "6636835" "6473739" "6208976" "6212265" "6229694" "6594502" "6327575" "6185096" "5699226").PN.	US-PGPUB; USPAT	OR	ON	2005/02/11 13:45
L31	1	("6215475").PN.	US-PGPUB; USPAT	OR	ON	2005/02/11 13:45
L32	3	(29 or 30 or 31) and 1 and ("e-mail" or "email" or "electronic mail")	US-PGPUB; USPAT	OR	ON	2005/02/11 14:26
L33	1	22 and restaurant	US-PGPUB; USPAT	OR	ON	2005/02/11 13:50
L34	84	alarm.ti. and computer.ti,ab. and 1	US-PGPUB; USPAT	OR	ON	2005/02/11 13:51
L35	11	alarm.ti. and computer.ti,ab. and 1 and premise	US-PGPUB; USPAT	OR	ON	2005/02/11 13:52
L36	74	alarm.ti,ab. and 1 and (remov\$ with premise)	US-PGPUB; USPAT	OR	ON	2005/02/11 13:53
L37	1	alarm.ti,ab. and 1 and (remov\$ with premise) and (laptop or "lap top" or "lap-top")	US-PGPUB; USPAT	OR	ON	2005/02/11 13:54
L38	18	("5748083").URPN.	USPAT	OR	ON	2005/02/11 13:55
L39	8	("20010022552"   "4213110"   "4536754"   "5172098"   "5714934"   "5748083"   "5790020"   "5995003").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2005/02/11 13:56
L40	7	(38 or 39) and laptop	US-PGPUB; USPAT; USOCR	OR	ON	2005/02/11 14:00
L41	7	(38 or 39) and laptop and (timing or time)	US-PGPUB; USPAT; USOCR	OR	ON	2005/02/11 14:01
L42	41	(29 or 30 or 31)	US-PGPUB; USPAT	OR	ON	2005/02/11 14:26
S1	22	restaurant.ti.	US-PGPUB	OR	ON	2003/07/27 18:01
S2	8243	"705"/\$.ccls.	USPAT	OR	ON	2003/07/26 17:03

S3	180	restaurant.ti.	USPAT	OR	ON	2003/07/26 17:03
S4	21	"705"/\$.cccls. and restaurant.ti.	USPAT	OR	ON	2003/07/26 17:03
S5	31	("3237198"   "3304416"   "3445633"   "3622995"   "3786421"   "3826344"   "3931497"   "4073368"   "4128757"   "4169521"   "4247759"   "4300044"   "4388689"   "4396985"   "4415065"   "4428049"   "4449186"   "4530067"   "4547851"   "4553222"   "4567359"   "4569421"   "4582172"   "4589069"   "4593186"   "4638312"   "4675515"   "4722053"   "4775935"   "4797818"   "4882475").PN.	USPAT	OR	ON	2003/07/26 17:13
S6	10	("3267436"   "3605089"   "3688276"   "3792444"   "3899775"   "3956740"   "4007443"   "4025766"   "4090247"   "4107784").PN.	USPAT	OR	ON	2003/07/26 17:14
S7	7	"5018066".URPN.	USPAT	OR	ON	2003/07/26 17:16
S8	10	("1330368"   "1358230"   "2114806"   "4642459"   "4723794"   "4949079"   "5018066"   "5127880"   "5159322"   "5241303").PN.	USPAT	OR	ON	2003/07/26 17:17
S9	21	("3254335"   "3534357"   "3588838"   "4128757"   "4133530"   "4222111"   "4247106"   "4286323"   "4300040"   "4302010"   "4335809"   "4388689"   "4415065"   "4420234"   "4449186"   "4485398"   "4530067"   "4547851"   "4701849"   "4722053"   "4777488").PN.	USPAT	OR	ON	2003/07/26 17:20
S10	2	("3304416"   "3310797").PN.	USPAT	OR	ON	2003/07/26 17:21
S11	7	"3310797".URPN.	USPAT	OR	ON	2003/07/26 17:21
S12	16	("D138474"   "D195408"   "D208634"   "D275196"   "D296891"   "D296893"   "2924661"   "4046972"   "4074793"   "4232196"   "4485400"   "4518821"   "4577068"   "4663670"   "4694486"   "4720849").PN.	USPAT	OR	ON	2003/07/26 17:23
S13	5	("3588838"   "3753233"   "3760375"   "4192006"   "4310839").PN.	USPAT	OR	ON	2003/07/26 17:24
S14	0	("6845263").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2003/07/26 17:37

S15	1	("5845263").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2003/07/26 17:37
S16	1	("5845263").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2003/07/26 18:31
S17	31	("3237198"   "3304416"   "3445633"   "3622995"   "3786421"   "3826344"   "3931497"   "4073368"   "4128757"   "4169521"   "4247759"   "4300044"   "4388689"   "4396985"   "4415065"   "4428049"   "4449186"   "4530067"   "4547851"   "4553222"   "4567359"   "4569421"   "4582172"   "4589069"   "4593186"   "4638312"   "4675515"   "4722053"   "4775935"   "4797818"   "4882475").PN.	USPAT	OR	ON	2003/07/26 18:36
S18	6	(RF or wireless) and (("3237198"   "3304416"   "3445633"   "3622995"   "3786421"   "3826344"   "3931497"   "4073368"   "4128757"   "4169521"   "4247759"   "4300044"   "4388689"   "4396985"   "4415065"   "4428049"   "4449186"   "4530067"   "4547851"   "4553222"   "4567359"   "4569421"   "4582172"   "4589069"   "4593186"   "4638312"   "4675515"   "4722053"   "4775935"   "4797818"   "4882475").PN.)	USPAT	OR	ON	2003/07/26 18:47
S19	5	(US-20030088469-\$ or US-20020077843-\$ or US-20020038165-\$ or US-20010047301-\$ or US-20020032667-\$).did.	US-PGPUB	OR	OFF	2003/07/26 18:47
S20	0	(RF or wireless) and ((US-20030088469-\$ or US-20020077843-\$ or US-20020038165-\$ or US-20010047301-\$ or US-20020032667-\$).did.)	USPAT	OR	ON	2003/07/26 18:48
S21	0	((radio adj1 frequency) or RF or wireless) and ((US-20030088469-\$ or US-20020077843-\$ or US-20020038165-\$ or US-20010047301-\$ or US-20020032667-\$).did.)	USPAT	OR	ON	2003/07/26 18:53

S22	15	(US-6366196-\$ or US-6341268-\$ or US-6088681-\$ or US-5839115-\$ or US-5838798-\$ or US-5602730-\$ or US-5128862-\$ or US-5018066-\$ or US-5003472-\$ or US-4935720-\$ or US-4800438-\$ or US-4553222-\$ or US-4547851-\$ or US-4530067-\$ or US-4388689-\$).did.	USPAT	OR	OFF	2003/07/26 18:53
S23	6	((radio adj1 frequency) or RF or wireless) and ((US-6366196-\$ or US-6341268-\$ or US-6088681-\$ or US-5839115-\$ or US-5838798-\$ or US-5602730-\$ or US-5128862-\$ or US-5018066-\$ or US-5003472-\$ or US-4935720-\$ or US-4800438-\$ or US-4553222-\$ or US-4547851-\$ or US-4530067-\$ or US-4388689-\$).did.)	USPAT	OR	ON	2003/07/26 19:29
S24	1	("5018066").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2003/07/26 19:53
S25	1	("57018536").PN.	USOCR; EPO; JPO; DERWENT	OR	OFF	2003/07/26 19:59
S26	0	("0070515").PN.	USOCR; EPO; JPO; DERWENT	OR	OFF	2003/07/26 21:08
S27	102	(705/15).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2003/07/26 21:09
S28	367	(705/16).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2003/07/26 21:09
S29	1	("5857020").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2003/07/27 18:01
S30	12	"5857020".URPN.	USPAT	OR	ON	2003/07/27 18:01
S31	1	("20020038165").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2004/08/10 10:43
S32	0	"20020038165".URPN.	USPAT	OR	ON	2004/08/10 10:25
S33	729	(card and reader).ti.	USPAT	OR	ON	2004/08/10 10:44
S34	20	(card and reader).ti. and (POS)	USPAT	OR	ON	2004/08/10 10:46
S35	5	(card and reader).ti. and (POS) and identify	USPAT	OR	ON	2004/08/10 10:47
S36	2991	terminal adj1 identifi\$	USPAT	OR	ON	2004/08/10 10:48
S37	130	pOS and (terminal adj1 identifi\$)	USPAT	OR	ON	2004/08/10 10:48
S38	160	(terminal adj1 identifi\$).ti,ab.	USPAT	OR	ON	2004/08/10 10:48

S39	7	(pOS and (terminal adj1 identifi\$)) and ((terminal adj1 identifi\$).ti,ab.)	USPAT	OR	ON	2004/08/10 10:52
S40	116	(bar adj1 code).ti. and identifi\$.ti, ab.	USPAT	OR	ON	2004/08/10 10:52
S41	12	(bar adj1 code).ti. and identifi\$.ti, ab. and POS	USPAT	OR	ON	2004/08/10 10:54
S42	28	(bar adj1 code with identifi\$).ti,ab. and POS	USPAT	OR	ON	2004/08/10 10:58
S43	3	"5962829".URPN.	USPAT	OR	ON	2004/08/10 10:56
S44	23	("4417136"   "4555618"   "4591705"   "4608489"   "4720785"   "4878771"   "4908500"   "4958064"   "5065002"   "5107100"   "5121945"   "5187351"   "5243655"   "5265008"   "5298476"   "5334822"   "5337361"   "5359522"   "5382779"   "5422473"   "5489158"   "5491637"   "5587575").PN.	USPAT	OR	ON	2004/08/10 10:57
S45	126	"5337361".URPN.	USPAT	OR	ON	2004/08/10 10:57
S46	80	(bar adj1 code) and "5337361".URPN.	USPAT	OR	ON	2004/08/10 10:58
S47	12	(bar adj1 code).ti,ab. and "5337361".URPN.	USPAT	OR	ON	2004/08/10 10:59
S48	12	(bar adj1 code).ti,ab. and "5337361".URPN. and (bar adj1 code)	USPAT	OR	ON	2004/08/10 10:59
S49	14	"5596652".URPN.	USPAT	OR	ON	2004/08/10 11:02
S50	9	("5113445"   "5243655"   "5266780"   "5337361"   "5343446"   "5393965"   "5399846"   "5406491"   "5459657").PN.	USPAT	OR	ON	2004/08/10 11:03
S51	15	"5459657".URPN.	USPAT	OR	ON	2004/08/10 11:11



S52	72	("D270061"   "D270062"   "D270063"   "D297939"   "D309295"   "D314372"   "D315549"   "D319433"   "D338656"   "D345147"   "D346999"   "D348654"   "D356299"   "3356836"   "3876863"   "4279021"   "4336530"   "4387297"   "4412751"   "4458238"   "4460120"   "4523297"   "4587630"   "4593186"   "4660221"   "4664101"   "4686332"   "4725694"   "4758717"   "4794239"   "4835713"   "4847818"   "4866642"   "4866646"   "4885580"   "4889982"   "4916441"   "4954967"   "4969206"   "5007085"   "5015831"   "5031119"   "5059778"   "5107253"   "5110226"   "5113445"   "5123064"   "5130520"   "5144120"   "5202817"   "5216233"   "5227614"   "5227617"   "5235495"   "5237161"   "5243655"   "5264992"   "5304786"   "5324925"   "5331136"   "5334821"   "5337361"   "5347115"   "5350909"   "5367152"   "5373148"   "5375076"   "5378883"   "5386107"   "5408077"   "5408078"   "5410141").PN.	USPAT	OR	ON	2004/08/10 11:48
-----	----	--	-------	----	----	------------------

S53	0	restaurant and (("D270061"   "D270062"   "D270063"   "D297939"   "D309295"   "D314372"   "D315549"   "D319433"   "D338656"   "D345147"   "D346999"   "D348654"   "D356299"   "3356836"   "3876863"   "4279021"   "4336530"   "4387297"   "4412751"   "4458238"   "4460120"   "4523297"   "4587630"   "4593186"   "4660221"   "4664101"   "4686332"   "4725694"   "4758717"   "4794239"   "4835713"   "4847818"   "4866642"   "4866646"   "4885580"   "4889982"   "4916441"   "4954967"   "4969206"   "5007085"   "5015831"   "5031119"   "5059778"   "5107253"   "5110226"   "5113445"   "5123064"   "5130520"   "5144120"   "5202817"   "5216233"   "5227614"   "5227617"   "5235495"   "5237161"   "5243655"   "5264992"   "5304786"   "5324925"   "5331136"   "5334821"   "5337361"   "5347115"   "5350909"   "5367152"   "5373148"   "5375076"   "5378883"   "5386107"   "5408077"   "5408078"   "5410141").PN.)	USPAT	OR	ON	2004/08/10 11:11
-----	---	--	-------	----	----	------------------

S54	0	pOS and ("D270061"   "D270062"   "D270063"   "D297939"   "D309295"   "D314372"   "D315549"   "D319433"   "D338656"   "D345147"   "D346999"   "D348654"   "D356299"   "3356836"   "3876863"   "4279021"   "4336530"   "4387297"   "4412751"   "4458238"   "4460120"   "4523297"   "4587630"   "4593186"   "4660221"   "4664101"   "4686332"   "4725694"   "4758717"   "4794239"   "4835713"   "4847818"   "4866642"   "4866646"   "4885580"   "4889982"   "4916441"   "4954967"   "4969206"   "5007085"   "5015831"   "5031119"   "5059778"   "5107253"   "5110226"   "5113445"   "5123064"   "5130520"   "5144120"   "5202817"   "5216233"   "5227614"   "5227617"   "5235495"   "5237161"   "5243655"   "5264992"   "5304786"   "5324925"   "5331136"   "5334821"   "5337361"   "5347115"   "5350909"   "5367152"   "5373148"   "5375076"   "5378883"   "5386107"   "5408077"   "5408078"   "5410141").PN.)	USPAT	OR	ON	2004/08/10 11:12
S55	1	("5699226").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2004/08/10 11:49
S56	20	"5699226".URPN.	USPAT	OR	ON	2004/08/10 13:03

*Considered 07/11/05*

PARTIAL LISTINGS  
OF

PATENTS<sup>(12)</sup> **United States Patent**  
Helot et al.



US006301106B1

(10) Patent No.: **US 6,301,106 B1**  
(45) Date of Patent: **\*Oct. 9, 2001**

(54) **DOCKING STATION HAVING A PLURALITY OF ADAPTER TRAYS FOR A PLURALITY OF PORTABLE COMPUTERS**

5,699,226 \* 12/1997 Cavello ..... 361/686

\* cited by examiner

(75) Inventors: **Jacques H. Helot**, San Mateo; **Jaime Segura**, Palo Alto; **Guy Lichtenwalter**, San Jose, all of CA (US); **Michael D. Derocher**; **Gerald W. Steiger**, both of Corvallis, OR (US); **Masahiko Muranami**, San Jose, CA (US)

*Primary Examiner*—Leo P. Picard  
*Assistant Examiner*—Yean-Hsi Chang

(73) Assignee: **Hewlett-Packard Company**, Palo Alto, CA (US)

(57) **ABSTRACT**

(\*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

The invention provides a single docking station structure which is usable for a set of different pieces of equipment having essentially similar interfaces, such as a manufacturer's line of portable ("notebook" or "laptop") computer product models. A common first module supports interfaces with peripheral devices or the like. A model-specific second module, second from a set of second modules that correspond with various models from the line of portable computers, is coupled with the first module to support the portable computer. The second module supports the portable computer, so as to interface it directly with the interface on the first module. The second modules, preferably configured as trays for holding the portable computers, are very simple and inexpensive to manufacture. The trays can be stored next to the docking station (like magazines on a bookshelf). An identification system, which labels the different trays and cross-references them to the corresponding portable computers, allows for future changes in the manufacturer's product line, in which a new model of portable computer requires either a new tray or one of the previously existing trays. The invention is advantageous to manufacturers because it reduces the number and variety of docking station products required for use with the manufacturer's portable computers.

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/179,241**

(22) Filed: **Oct. 26, 1998**

(51) Int. Cl.<sup>7</sup> ..... **G06F 1/16**

(52) U.S. Cl. .... **361/686; 361/681; 361/683; 320/107; 320/110; 320/113**

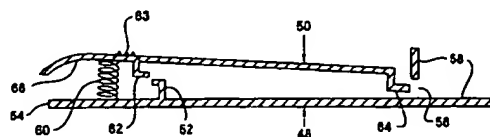
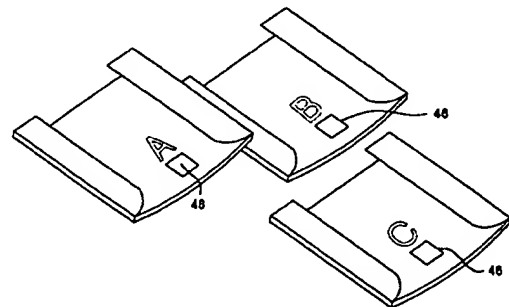
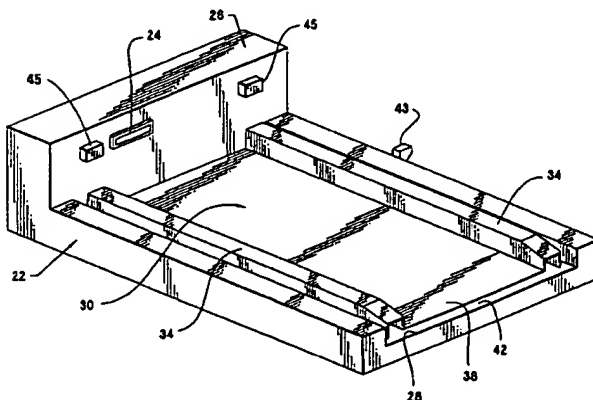
(58) Field of Search ..... **361/686, 681, 361/683; 320/107, 113, 110**

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

5,694,292 \* 12/1997 Paulsel et al. .... 361/686

**11 Claims, 8 Drawing Sheets**



US-PAT-NO: 6301106

DOCUMENT-IDENTIFIER: US 6301106 B1

**\*\*See image for Certificate of Correction\*\***

TITLE: Docking station having a plurality of adapter trays for  
a plurality of portable computers

----- KWIC -----

Abstract Text - ABTX (1):

The invention provides a single docking station structure which is usable for a set of different pieces of equipment having essentially similar interfaces, such as a manufacturer's line of portable ("notebook" or "laptop") computer product models. A common first module supports interfaces with peripheral devices or the like. A model-specific second module, second from a set of second modules that correspond with various models from the line of portable computers, is coupled with the first module to support the portable computer. The second module supports the portable computer, so as to interface it directly with the interface on the first module. The second modules, preferably configured as trays for holding the portable computers, are very simple and inexpensive to manufacture. The trays can be stored next to the docking station (like magazines on a bookshelf). An identification system, which labels the different trays and cross-references them to the corresponding portable computers, allows for future changes in the manufacturer's product line, in which a new model of portable computer requires either a new tray or one of the previously existing trays. The invention is advantageous to manufacturers because it reduces the number and variety of docking station products required for use with the manufacturer's portable computers.

Application Filing Date - AD (1):

19981026

TITLE - TI (1):

Docking station having a plurality of adapter trays for a plurality of portable computers



US006341268B2

(12) **United States Patent**  
Walker et al.

(10) Patent No.: **US 6,341,268 B2**  
(45) Date of Patent: **\*Jan. 22, 2002**

(54) **SYSTEM AND METHOD PROVIDING A RESTAURANT MENU DYNAMICALLY GENERATED BASED ON REVENUE MANAGEMENT INFORMATION**

(75) Inventors: Jay S. Walker, Ridgefield; Andrew S. Van Luchene, Norwalk; James A. Jorasch, Stamford, all of CT (US); Keith Bemer, New York, NY (US)

(73) Assignee: Walker Digital, LLC, Stamford, CT (US)

(\*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/219,220

(22) Filed: Dec. 23, 1998

(51) Int. Cl.<sup>7</sup> ..... G06F 17/60

(52) U.S. Cl. .... 705/15; 705/400

(58) Field of Search ..... 705/1, 15, 16, 705/20, 22, 400

(56) **References Cited**

#### U.S. PATENT DOCUMENTS

3,634,958 A 1/1972 Drowns ..... 40/68  
4,500,880 A 2/1985 Gommersall et al. .. 340/825.35

4,530,067 A 7/1985 Dorr ..... 364/900  
4,553,222 A 11/1985 Kurland et al. .... 364/900  
4,766,295 A 8/1988 Davis et al. .... 235/383  
4,972,318 A 11/1990 Brown et al. .... 364/403  
5,303,297 A 4/1994 Hillis ..... 379/63  
5,410,830 A 5/1995 Aiken, Sr. .... 40/518  
5,504,475 A 4/1996 Houdou et al. .... 340/825.35  
5,519,622 A 5/1996 Chasek ..... 364/464.04  
5,572,653 A 11/1996 DeTemple et al. .... 395/501  
5,623,662 A \* 4/1997 McIntosh ..... 707/204  
5,758,329 A 5/1998 Wojcik et al. .... 705/28  
6,038,545 A \* 3/2000 Mandeberg et al. .... 705/15

#### FOREIGN PATENT DOCUMENTS

JP 10-49757 \* 11/1998  
WO WO 99/62016 \* 12/1999

#### OTHER PUBLICATIONS

Anderson: "Seafood Strategies", Restaurant Business, Mar. 01, 1991, v90 n4, pp. 205-209.\*

Shirley E. Kimes et al., "Restaurant Revenue Management: Applying Yielding Management to the Restaurant Industry", Cornell Hotel & Restaurant Quarterly, Jun. 1998 at p. 32.

\* cited by examiner

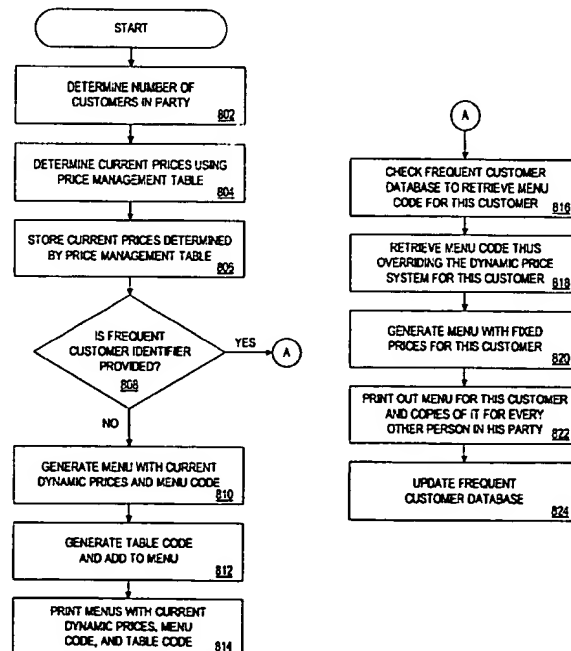
Primary Examiner—Edward R. Cosimano

(74) Attorney, Agent, or Firm—Dean P. Alderucci

(57) **ABSTRACT**

A price associated with a menu item is automatically determined based at least partly on revenue management information. A request for a menu is received and a menu, including the automatically determined price, is generated in response to the request.

15 Claims, 12 Drawing Sheets



US-PAT-NO: 6341268

DOCUMENT-IDENTIFIER: US 6341268 B1

TITLE: System and method providing a restaurant menu  
dynamically generated based on revenue management  
information

----- KWIC -----

US Document Identifier - DID (1):  
US 6341268 B1

Application Filing Date - AD (1):  
19981223

TITLE - TI (1):  
System and method providing a restaurant menu dynamically generated based  
on revenue management information

Detailed Description Text - DETX (5):

Another embodiment of the present invention provides a system that customizes a menu for a frequent customer. This could be done, for example, by having the customer swipe a card with a magnetic stripe through a reader. A visual recognition machine, or even an employee, could instead identify frequent customers. Standard prices and/or the frequent customer's favorite menu items could then be used to generate a customized menu. The items ordered by the frequent customer and/or the prices paid for those items can also be stored in a frequent customer database for future use.

Detailed Description Text - DETX (13):

According to still another embodiment of the present invention, prices and/or items on the menu can also be based at least partly on information related to a customer associated with the request for the menu. For example, a card reading machine, a visual recognition unit or a manual input device may be used to identify a frequent customer. The central server 100 may then, for example, automatically select the frequent customer's favorite items to be included on the menu. The central server 100 may also, if desired, use a fixed set of prices, instead of dynamically generated prices, for the frequent customer. Information about frequent customers can also comprise part of the inventory information used to generate menus. For example, if a frequent customer always orders steak at 7:30 p.m. on Friday, the system can "reserve" one steak for that customer. Similarly, the average number of steaks ordered in a predetermined time period may be used to determine a number of steaks that are reserved. Furthermore, steaks may be omitted from the menus provided to nonfrequent customers. A special discount, such as a discount that increases based on the amount of money spent by a customer, can also be used by the

central server 100 to generate a menu or calculate a bill.

Detailed Description Text - DETX (26):

FIG. 4 is a tabular representation of the frequent customer database 600 shown in FIG. 2 according to an embodiment of the present invention. As shown in FIG. 4, the frequent customer database 600 includes a name 602, a menu number 604, a day/date of last visit 606, a frequent customer identification number 608, an address 610, a phone number 612, a total number of visits 614 and an average time of day per visit 616.

Detailed Description Text - DETX (36):

In other words, each order that is made by an ordering party is correlated to a menu code that corresponds to the menu from which the order was made. According to one embodiment of the present invention, when a bill is requested the server enters the items ordered and the menu code (or table code) into, for example, an automated cash register. The system uses the menu code to look up the prices associated with the items ordered. A total is then calculated using those prices. Note that either a menu number, table number or any other code can be used to associate an ordered item with an appropriate price.

Detailed Description Text - DETX (38):

FIG. 8 is a flow chart illustrating a method of generating a dessert menu according to an embodiment of the present invention. At step 950 a table identification code is received.

Detailed Description Text - DETX (39):

The menu identification code associated with the received table code is retrieved at step 952. The dessert menu portion of the menu associated with a specific menu code is retrieved at step 954 and the dessert menu is printed from the appropriate menu at step 956. If desired, a dessert menu could be printed on the original menu. According to an embodiment of the present invention, the prices listed for desserts may be the same as the prices on the original menu. In this case, the code may be stored with the menu code and retrieved when the customer wants to order dessert. For example, when an employee needs to retrieve a dessert menu from a specific menu code, he or she enters the menu code into the system and the prices for the desserts listed for that code are automatically printed on a new menu. If dessert is not included on the original menu, a dessert menu can be generated and printed in the same way as the original menu.





US005969968A

# United States Patent [19]

Pentel

[11] Patent Number: **5,969,968**  
 [45] Date of Patent: **Oct. 19, 1999**

## [54] REMOTE ORDERING SYSTEM FOR RESTAURANT DRIVE-UP LANE

[76] Inventor: **Randolph M. Pentel**, 815 Deer Trail Ct., Mendota Heights, Minn. 55118

[21] Appl. No.: **09/062,093**

[22] Filed: **Apr. 17, 1998**

[51] Int. Cl.<sup>6</sup> ..... **G06F 15/24**

[52] U.S. Cl. .... **364/405; 364/401; 235/381**

[58] Field of Search ..... **364/405, 401; 235/381**

## [56] References Cited

### U.S. PATENT DOCUMENTS

4,300,040	11/1981	Gould et al. .	
4,414,467	11/1983	Gould et al. .	
4,449,186	5/1984	Kelly et al. ....	364/407
4,654,482	3/1987	DeAngelis .	
4,722,053	1/1988	Dubno et al. .	
5,128,862	7/1992	Mueller .	
5,235,509	8/1993	Mueller et al. .	
5,319,542	6/1994	King, Jr. et al. .	
5,353,219	10/1994	Mueller et al. .	
5,465,291	11/1995	Barrus et al. .	
5,664,110	9/1997	Green et al. .	

*Primary Examiner*—Harold I. Pitts

*Attorney, Agent, or Firm*—Mackall, Crounse & Moore, PLC

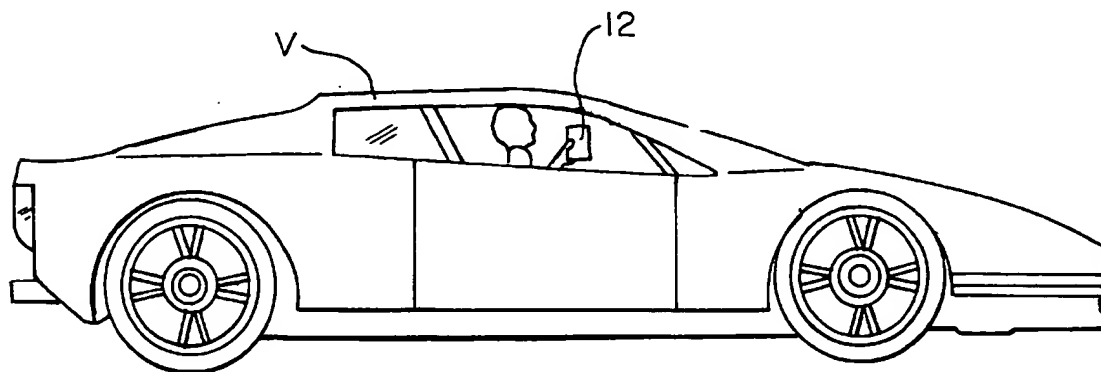
## [57] ABSTRACT

A remote ordering system for a restaurant drive-through lane, consisting of an input device having a keypad, a battery, a first memory, a first processor, and a transmitter; and a drive-up ordering station adjacent the restaurant

drive-through lane and unconnected to the input device, the ordering station having a posted visual menu, a receiver tuned to the transmitter, a second processor adapted to decode information received from the transmitter through the receiver and produce decoded information, a display to display the decoded information, a second memory to store item numbers and prices, and a communications link to a point-of-sale system. Preferably, the remote device is hand-held and operated from within the vehicle. A data processing method for ordering menu items from a vehicle at the drive-up lane of a restaurant, includes the steps of:

- (a) displaying a welcome screen on a display on a drive-up ordering station adjacent the restaurant's drive-up lane;
- (b) sending a start signal from a remote device in the vehicle to the drive-up ordering station;
- (c) displaying an enter item number screen on the display;
- (d) sending an item number from the remote device to the display;
- (e) displaying an item identifier and quantity screen on the display;
- (f) sending an item quantity from the remote device to the drive-up ordering station;
- (g) calculating an item total and displaying an item total screen on the display;
- (h) displaying an enter/remove/finish screen on the display;
- (i) optionally repeating steps (c) throughj (h) for additional items;
- (j) calculating an order total and displaying an order total screen on the display; and sending order information to a point-of-sale system connected to the drive-up ordering station.

**13 Claims, 8 Drawing Sheets**



US-PAT-NO: 5969968

DOCUMENT-IDENTIFIER: US 5969968 A

TITLE: Remote ordering system for restaurant drive-up lane

----- KWIC -----

Abstract Text - ABTX (1):

A remote ordering system for a restaurant drive-through lane, consisting of an input device having a keypad, a battery, a first memory, a first processor, and a transmitter; and a drive-up ordering station adjacent the restaurant drive-through lane and unconnected to the input device, the ordering station having a posted visual menu, a receiver tuned to the transmitter, a second processor adapted to decode information received from the transmitter through the receiver and produce decoded information, a display to display the decoded information, a second memory to store item numbers and prices, and a communications link to a point-of-sale system. Preferably, the remote device is hand-held and operated from within the vehicle. A data processing method for ordering menu items from a vehicle at the drive-up lane of a restaurant, includes the steps of:

Abstract Text - ABTX (2):

(a) displaying a welcome screen on a display on a drive-up ordering station adjacent the restaurant's drive-up lane;

Abstract Text - ABTX (3):

(b) sending a start signal from a remote device in the vehicle to the drive-up ordering station;

Abstract Text - ABTX (7):

(f) sending an item quantity from the remote device to the drive-up ordering station;

Abstract Text - ABTX (11):

(j) calculating an order total and displaying an order total screen on the display; and sending order information to a point-of-sale system connected to the drive-up ordering station.

US Document Identifier - DID (1):

US 5969968 A

Application Filing Date - AD (1):

19980417

TITLE - TI (1):

Remote ordering system for restaurant drive-up lane

Brief Summary Text - BSTX (2):

This invention relates to a remote ordering system for a restaurant drive-through lane.

Brief Summary Text - BSTX (6):

A problem with previous drive-through ordering systems that do not use a microphone is that they require the customer to lean out of the vehicle to press a button on a menu or use a touch screen. This is awkward if not impossible for some people, such as very obese people. Also, this exposes the customer to rain, snow, etc. while the order is being placed. Generally speaking, there is no feedback as to the type, quantity, or total price of items ordered, and no capability to back up to correct an incorrectly-entered item.

Brief Summary Text - BSTX (7):

There is a need for a remote ordering system for a drive-through lane that addresses the above problems. Additionally, the system should provide a completely transportable, hand-held remote device that can be assigned to customers who order frequently from the restaurant. Optimally, the device will have a customer identification which is transmitted with each order so that the restaurant can perform statistical analysis.

Brief Summary Text - BSTX (9):

A remote ordering system for a restaurant drive-through lane, consisting of an input device having a keypad, a battery, a first memory, a first processor, and a transmitter; and a drive-up ordering station adjacent the restaurant drive-through lane and unconnected to the input device, the ordering station having a posted visual menu, a receiver tuned to the transmitter, a second processor adapted to decode information received from the transmitter through the receiver and produce decoded information, a display to display the decoded information, a second memory to store item numbers and prices, and a communications link to a point-of-sale system. Preferably, the remote device is hand-held and operated from within the vehicle. A data processing method for ordering menu items from a vehicle at the drive-up lane of a restaurant, includes the steps of:

Brief Summary Text - BSTX (10):

(a) displaying a welcome screen on a display on a drive-up ordering station adjacent the restaurant's drive-up lane;

Brief Summary Text - BSTX (11):

(b) sending a start signal from a remote device in the vehicle to the drive-up ordering station;

Brief Summary Text - BSTX (15):

(f) sending an item quantity from the remote device to the drive-up ordering station;

Brief Summary Text - BSTX (20):

(k) sending order information to a point-of-sale system connected to the drive-up ordering station.

Brief Summary Text - BSTX (25):

Another object and advantage of the present invention is that it allows the restaurant owner to assign a hand-held device to each customer who orders frequently, and to track each customer's ordering habits through a customer identification coded into the device.

Detailed Description Text - DETX (2):

The remote ordering system for a restaurant drive-through lane of the present invention is generally designated in the Figures as reference numeral 10.

Detailed Description Text - DETX (3):

The remote ordering system 10 comprises an input device 12 and a drive-up ordering station 14. The input device 12 is unconnected to the drive-up ordering station 14, and the input device is used from inside the vehicle V. Preferably, the input device 12 is hand-held and is transportable away from the drive-up ordering station 14. Multiple devices 12 may be used, with a separate device being assigned to each customer. The input device 12 is preferably used within direct line-of-sight of the drive-up ordering station 14. That is, it is not intended that the devices operate while greatly separated, as for example over a telephone network.

Detailed Description Text - DETX (4):

Preferably, the input device 12 has a keypad 16, battery 18, a first memory 20, a first processor 22, and a transmitter 24. The first memory 20 and first processor 22 may be discrete components, or they may both be in an Application Specific Integrated Circuit (ASIC) as seen in FIG. 3. A customer identification number may be stored in the first memory 20 for transmission to the drive-up ordering station with the order.

Detailed Description Text - DETX (6):

The drive-up ordering station 14 has a posted visual menu 30 which has the description and order number of various food items. A receiver 32 is tuned to the transmitter 24. The station 14 also has a second processor 34 which is adapted to decode information received from the transmitter 24 through the receiver 32 and produce decoded information. The decoded information, for example, item description and price, is displayed on a display 36. A second memory 38 stores item numbers, descriptions, and prices which may be received from a point-of-sale system 40 through a communications link 42. The second memory 38 and second processor 34 may be discrete components, or they may both be in an Application Specific Integrated Circuit (ASIC) as seen in FIG. 4.

Detailed Description Text - DETX (8):

The remote ordering system 10 further comprises remote software executing in the first processor 22 and managing the remote input device 12; and ordering

station software executing in the second processor 34 managing the ordering station 14. A flowchart of the remote software and ordering station software is shown in FIG. 5.

Detailed Description Text - DETX (9):

First, the ordering station software displays a "welcome" screen on the display 36. The welcome screen may invite the customer to initiate a transaction by pressing the start key 16f on the remote device 12.

Detailed Description Text - DETX (10):

The customer then presses the start key 16f on the remote device 12, causing a signal to be sent from the transmitter 24 to the receiver 32. The start signal is decoded by the ordering station software executing in the second processor 34. Optionally, a customer identification may be sent with the start signal or as a separate transmission.

Detailed Description Text - DETX (11):

In the next step, the ordering station software causes an "enter item number" screen (FIG. 6A) to be displayed on the display 36. The item numbers available to the customer will be shown on the posted menu 30 along with a description of the item (hamburger, cheeseburger, etc.) associated with the item number.

Detailed Description Text - DETX (12):

In response to the "enter item number screen", the customer presses one or more of the numeric keys 16a to input the item number. (FIG. 6B) The customer then initiates transmission of the item number to the ordering station 14 by, for example, pressing the "enter" key 16b.

Detailed Description Text - DETX (13):

The item number is received by the receiver 32 and decoded by the ordering station software executing in the second processor 34. The ordering station software then associates the item number with an item description by looking in a table held in the second memory 38.

Detailed Description Text - DETX (14):

Next, the ordering station software sends an "item identifier and quantity" screen (FIG. 7) to the display 36. This screen invites the customer to enter the quantity of this item desired.

Detailed Description Text - DETX (16):

The receiver 32 receives the item quantity for the first item and passes this to the second processor 34 for decoding. The second processor then makes an entry for the quantity of the first item in the second memory 38. The second processor looks up the price of this item from a table maintained in the second memory 38 and calculates an item total for the first item. The ordering station software then transmits an item total screen (FIG. 8) for the first item to the display 36.

Detailed Description Text - DETX (17):

When the customer presses the "enter" key again, a transmission signalling pressing of the "enter" key is sent to the ordering station 14. The ordering station software then transmits an "enter/remove/finish" screen (FIG. 9) to the display 36.

Detailed Description Text - DETX (19):

If the "enter" key is pressed, the remote device 12 signals the ordering station 14 to bring up an "enter item number" screen (FIG. 6A) to begin the process described above for ordering another item.

Detailed Description Text - DETX (20):

If the "remove" key 16c is pressed, the remote device 12 signals the ordering station to bring up a "remove item" screen (FIG. 11A). This screen will list the item(s) ordered by item number, description, and quantity and display an order total. Optionally, the order subtotals may also be displayed (FIG. 11B). By using the numeric keys 16a, the customer indicates which item number to remove, then presses the "enter" key to signal the ordering station software to remove that item from the order. The ordering station software then redisplay the "enter/remove/finish" screen.

Detailed Description Text - DETX (21):

If the "finish" key 16f is pressed, the remote device 12 signals the ordering station to calculate an order total for all items and quantities ordered. The ordering station software then causes an order total screen (FIG. 10) to be displayed on the display 36.

Detailed Description Text - DETX (22):

The ordering station software then sends the order information to the point-of-sale system via the communications link 42.

Detailed Description Text - DETX (23):

The point-of-sale system may load item numbers, descriptions, and prices into the ordering station through the communication link 42.

Claims Text - CLTX (1):

1. A remote ordering system for a restaurant drive-through lane, comprising:

Claims Text - CLTX (3):

(b) a drive-up ordering station adjacent the restaurant drive-through lane and unconnected to said input device, said ordering station having a posted visual menu, a receiver tuned to said transmitter, a second processor adapted to decode information received from said transmitter through said receiver and produce decoded information, a display adapted to display said decoded information, a second memory adapted to store item numbers and prices, and a communications link to a point-of-sale system.

Claims Text - CLTX (4):

2. The remote ordering system of claim 1, further comprising a plurality of said input devices, each of said plurality of input devices being separately transportable away from said drive-up ordering station.

Claims Text - CLTX (5):

3. A remote ordering system for a restaurant drive-through lane, comprising:

Claims Text - CLTX (7):

(b) a drive-up ordering station adjacent the restaurant drive-through lane and unconnected to said hand-held input device, said ordering station having a posted visual menu, a receiver tuned to said transmitter, a second processor adapted to decode information received from said transmitter through said receiver and produce decoded information, a display adapted to display said decoded information, a second memory adapted to store item numbers and prices, and a communications link to a point-of-sale system,

Claims Text - CLTX (8):

(c) said hand-held input device transmitting an order to said drive-up ordering station while said hand-held input device is within direct line-of-sight of said drive-up ordering station.

Claims Text - CLTX (9):

4. The remote ordering system of claim 3, further comprising remote software executing in the first processor and adapted to manage the remote input device; and ordering station software executing in the second processor and adapted to manage the drive-up ordering station.

Claims Text - CLTX (10):

5. The remote ordering system of claim 3, wherein said keypad further comprises a number of numeric keys, an enter key, a remove key, a quantity add key, a quantity subtract key, and a start/finish key.

Claims Text - CLTX (11):

6. The remote ordering system of claim 3, wherein said transmitter and said receiver operate with radio frequency transmissions.

Claims Text - CLTX (12):

7. The remote ordering system of claim 3, wherein said transmitter and said receiver operate with infrared transmissions.

Claims Text - CLTX (13):

8. The remote ordering system of claim 3, further comprising a plurality of said hand-held devices, each of said plurality of hand-held devices being separately transportable away from said drive-up ordering station.

Claims Text - CLTX (14):

9. The remote ordering system of claim 3, wherein said first memory contains a customer identification number.

Claims Text - CLTX (15):

10. The remote **ordering** system of claim 9, wherein said remote software and said **ordering** station software cooperatively execute the steps of:

Claims Text - CLTX (29):

11. The remote **ordering** system of claim 6, further comprising a step of sending said customer **identification** number from said transmitter to said receiver and sending said customer **identification** number to the point-of-sale system.

Claims Text - CLTX (30):

12. A data processing method for **ordering** menu items from a vehicle at the drive-up lane of a restaurant, comprising the steps of:

Claims Text - CLTX (31):

(a) displaying a welcome screen on a display on a drive-up **ordering** station adjacent the restaurant's drive-up lane;

Claims Text - CLTX (32):

(b) sending a start signal from a remote device in the vehicle to said drive-up **ordering** station;

Claims Text - CLTX (36):

(f) sending an item quantity from said remote device to said drive-up **ordering** station;

Claims Text - CLTX (41):

(k) sending order information to a point-of-sale system connected to said drive-up **ordering** station.

Claims Text - CLTX (42):

13. The method of claim 12, further comprising a step of sending a customer **identification** number from said remote device to said drive-up **ordering** station and sending said customer **identification** number to said point-of-sale system.



**United States Patent** [19]  
**Kurland**

[11] **Patent Number:** **4,547,851**  
[45] **Date of Patent:** **Oct. 15, 1985**

[54] **INTEGRATED INTERACTIVE RESTAURANT COMMUNICATION METHOD FOR FOOD AND ENTERTAINMENT PROCESSING**

[76] **Inventor:** Lawrence G. Kurland, 26 Farmington La., Melville, N.Y. 11747

[21] **Appl. No.:** 474,983

[22] **Filed:** Mar. 14, 1983

[51] **Int. Cl.<sup>4</sup>** ..... G06F 3/04; G06F 15/24; G06F 15/44

[52] **U.S. Cl.** ..... 364/401; 364/410; 364/900

[58] **Field of Search** ..... 364/400-401, 364/404-405, 410-412, 200 MS File, 900 MS File; 235/7 R, 383

[56] **References Cited**

**U.S. PATENT DOCUMENTS**

3,588,838	6/1971	Felcheck	364/900 X
3,668,307	6/1972	Face et al.	178/5.6
3,691,295	9/1972	Fisk	178/58
3,746,780	7/1973	Stetten et al.	178/6.6 A
3,752,908	8/1973	Boenke et al.	178/5.6
3,757,225	9/1973	Ulicki	325/308
3,836,888	9/1974	Boenke et al.	340/172.5
3,903,402	9/1975	Petit et al.	235/151.21
3,968,327	7/1976	Gregg, III	178/6.8
4,001,785	1/1977	Miyazaki et al.	340/172.5
4,008,369	2/1977	Theurer et al.	358/84
4,028,733	6/1977	Ulicki	360/10
4,054,911	10/1977	Fletcher et al.	358/141
4,064,490	12/1977	Nagel	364/200
4,075,686	2/1978	Calle et al.	364/200
4,084,229	4/1978	Taylor et al.	364/200
4,117,605	10/1978	Kurland et al.	35/9 A
4,122,519	10/1978	Bielawski et al.	364/200
4,128,757	12/1978	Garner, Jr.	235/383
4,143,360	3/1979	Bernhart et al.	340/711
4,164,024	8/1979	Gilbert	364/900
4,191,956	3/1980	Groothuis	340/789
4,222,111	9/1980	Sloan et al.	364/900
4,247,106	1/1981	Jeffers et al.	364/410 X
4,251,691	2/1981	Kakihara et al.	179/2 TV

4,264,925	4/1981	Freeman et al.	358/86
4,283,709	8/1981	Lucero et al.	364/410 X
4,296,476	10/1981	Mayer et al.	364/900
4,306,388	12/1981	Yuter	52/6
4,333,152	1/1982	Best	364/410 X
4,388,689	1/1983	Hayman et al.	364/401
4,396,985	8/1983	Ohara	364/405
4,415,065	11/1983	Sandstedt	235/383

**OTHER PUBLICATIONS**

Wilkinson, Jr., "Restaurant System", *IBM Technical Disclosure Bulletin*, vol. 24, No. 9, Feb. 1982, (pp. 4630-4631).

*Primary Examiner*—Jerry Smith

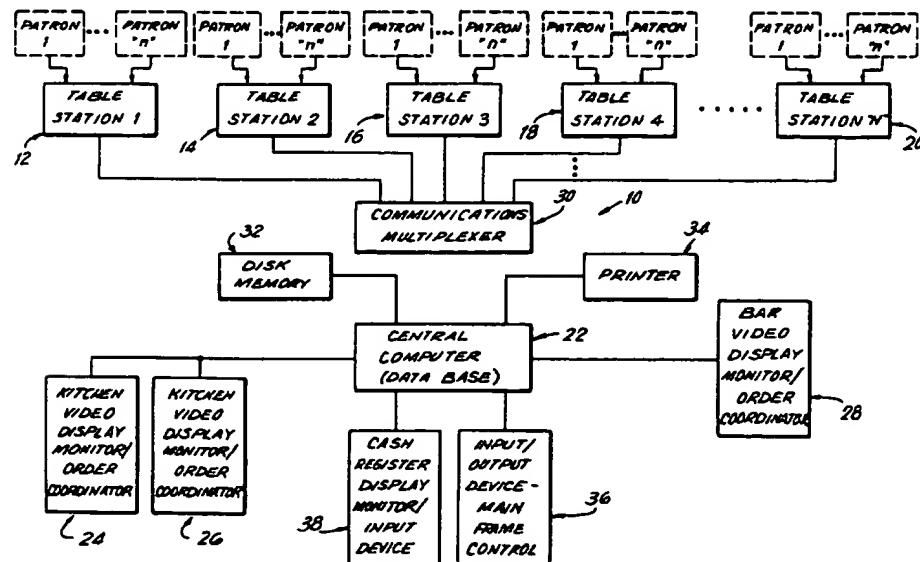
*Assistant Examiner*—Gary V. Harkcom

*Attorney, Agent, or Firm*—Stiefel, Gross, Kurland & Pavane

[57] **ABSTRACT**

An interactive restaurant communication system (10) provides integrated food and entertainment processing which enables restaurant patrons to accomplish both food selection and select and receive entertainment on a common video monitor (56) at their table. The patrons can obtain menus for individual food selection on the video monitor (56) at their tables and individually enter their orders into a table station "intelligent" terminal (12, 14, 16, 18, 20) at their tables. In addition they can select from and interactively play a variety of remotely retrievable interactive entertainment activities using the video monitor (56) while waiting for the food to arrive, and if desired, where applicable, have the food and entertainment charges automatically added to a composite bill which may be printed at the table station terminal (12, 14, 16, 18, 20) or at a remote central location. The food and entertainment functions of the terminal (12, 14, 16, 18, 20) are down-line loaded from a central data base (22, 32) in response to terminal requests therefor.

**11 Claims, 7 Drawing Figures**



US-PAT-NO: 4547851

DOCUMENT-IDENTIFIER: US 4547851 A

TITLE: Integrated interactive restaurant communication method  
for food and entertainment processing

----- KWIC -----

US Document Identifier - DID (1):  
US 4547851 A

Application Filing Date - AD (1):  
19830314

TITLE - TI (1):  
Integrated interactive restaurant communication method for food and  
entertainment processing

Brief Summary Text - BSTX (9):

The present invention relates to an interactive integrated restaurant information communication system for enabling both individualized food and entertainment interactive information communication, such as two-way communication over a common transmission media, between a central remote data base and a plurality of different multipurpose table station terminals located at various table stations throughout the restaurant for use by the restaurant patrons for both food selection, based on down-line loaded food menu modules selectably retrieved from the central data base, and entertainment selection and interactive play, such as video games, also based on down-line loaded entertainment modules selectably retrieved from the central data base. The charges, where applicable, for both the entertainment and food selections can be compositely automatically billed to the table station, with each patron having a unique identification code for billing and/or service purposes, and the bills printed either centrally or at each table station.

Brief Summary Text - BSTX (10):

The central data base comprises a central main computer which essentially performs the information routing functions, and remote retrievable storage for storing the various food and entertainment programs or sets of control instructions which are retrieved by the various table station terminals in response to selections made by the restaurant patrons, as well as handling coordination or processing and display of food orders in conjunction with kitchen and bar monitors, accumulation of restaurant management information and billing as well as other functions, if desired. Each of the table station terminals comprises a microprocessor and local storage which is down-line loaded with selected sets of control instructions from the central data base, under control of a master control program, in response to patron selection, and

a local video display which is utilized to display data for food and entertainment selection as well as to interactively play the game or entertainment selected, with the microprocessor processing incoming data to enable food and entertainments selections to be transmitted to the central data base and to enable the retrieved entertainment to be interactively played at the terminal in response to the retrieved locally stored selected set of control instructions. The food orders, under control of the central computer, are collected from the various table station terminals, and displayed on central kitchen and bar monitors, with the orders being cleared from the monitor screen, such as by using touch-sensitive screens, as they are filled for each table station. If desired, the orders can be assembled by table station, each having its unique patron identification code, and transported to the pertinent table station. Thus, each table station terminal can independently serve to provide both food selection and entertainment functions, interactively with a central data base, in the integrated restaurant communication system of the present invention, whereby the overall efficiency of the restaurant will be enhanced and better controlled.

Detailed Description Text - DETX (8):

As shown and preferred in FIG. 7, by way of example, preferably each table station has a unique position identification for each restaurant patron to facilitate accurate order filling and billing. Thus, assuming four restaurant patrons per table station by way of example, the various restaurant patrons at table station 1 illustrated in FIG. 7 would identify themselves to the table station terminal 12 as 1-1, 1-2, 1-3 and 1-4. In addition, by way of example, the video display unit 48 could be mounted on a universal swivel 80 so as to be rotatable for viewing by all of the patrons at the table station 1, with the keyboard 52 and joysticks 46a-46d being connected to the terminal 12 via conventional electronic umbilical cords to facilitate use by each patron at the table station 1. It should be noted that the table station configuration shown in FIG. 7 is merely illustrative and many other such configurations will readily occur to one of ordinary skill in the art.

Detailed Description Text - DETX (10):

Summarizing the overall operation of the preferred system 10 of the present invention, either after or before the diners or restaurant patrons are seated at their respective table station, the table station terminal would preferably display a welcome message and a list of choices for the patrons. The patrons would then select a choice by touching a location on the touch sensitive screen or by pressing keys on the keyboard. The initial choices may be type of food, type of meal, etc. Thereafter, by stepping through various displays, the patrons, using their unique position identification code, could order their meals which would be transmitted to the central data base for billing and filing. The patrons would then be allowed to select entertainment such as games, educational programs, computer generated art displays, etc., and possibly television channels if desired by using a television receiver as the video display unit. Associated charges for both food and entertainment, where applicable, would automatically be added to a composite bill. The central computer downloads the selected activity to the requesting table station

terminal, with each terminal being capable of independently requesting and receiving its own operating programs from the central data base. The patrons would then be free to interact with the downloaded operating program, whether it were a food menu module or an entertainment module. If desired, an initialization program could be run daily, or at any time, to set price changes, menu changes, entertainment changes, current time and date, enter deliveries, enter daily specials, etc.

Claims Text - CLTX (4):

locally displaying food menu selection data corresponding to said patron selected food menu module on said common video type display means in response to said down-line loaded patron selected set of control instructions, said video displayable food menu module data comprising menu selection data corresponding to a choice of food items to be ordered; individually patron selecting at least one of said video displayed food items for remotely patron ordering said selected food items; transmitting said at least one patron ordered food selection back to said central data base for central processing of said order; individually patron selecting a displayable remotely stored entertainment module via said food ordering table station terminal for video display on said common video type display means at said food ordering table station terminal; down-line loading said patron selected corresponding set of control instructions to said food ordering table station terminal for local storage thereof; locally video displaying entertainment data corresponding to said patron selected entertainment module on said food ordering table station terminal common video type display means in response to said down-line loaded selected set of control instructions to said food ordering table station terminal for enabling interaction with said video displayed entertainment data while said food order is being processed; whereby each table station terminal may independently provide both interactive entertainment and food selection on a common video type display terminal in cooperation with a central data base.

Claims Text - CLTX (5):

2. A method of interactively integrating food and entertainment selection for a plurality of table stations in a restaurant communication system in accordance with claim 1 further comprising the step of compositely billing charges for a given food ordering table station based on said food and entertainment selections of said down-line loaded information.

Claims Text - CLTX (9):

6. A method of interactively integrating food and entertainment selection for a plurality of table stations in a restaurant communication system in accordance with claim 1 wherein said remote storing step comprises the step of remotely retrievably storing interactive video games as at least a portion of said entertainment modules, said local video display step further comprising the step of locally video displaying a remotely retrieved interactive video game on said food ordering table station terminal common video type display means as said selected entertainment data.

Claims Text - CLTX (10):

7. A method of interactively integrating food and entertainment selection for a plurality of table stations in a restaurant communication system in accordance with claim 1 further comprising the step of uniquely identifying each restaurant patron at said food ordering table station and transmitting said unique patron identification to said central data base with at least said food selection information for enabling correlated food distribution based on said central processing thereof.

Claims Text - CLTX (11):

8. A method of interactively integrating food and entertainment selection for a plurality of table stations in a restaurant communication system in accordance with claim 7 further comprising the step of compositely billing charges for a given food ordering table station based on said food and entertainment selections of said down-line loaded information.

Claims Text - CLTX (13):

10. A method of interactively integrating food and entertainment selection for a plurality of table stations in a restaurant communication system in accordance with claim 9 further comprising the step of uniquely identifying each restaurant patron at said food ordering table station and transmitting said unique patron identification to said central data base with at least said food selection information for enabling correlated food distribution based on said central processing thereof.

Claims Text - CLTX (14):

11. A method of interactively integrating food and entertainment selection for a plurality of table stations in a restaurant communication system in accordance with claim 10 further comprising the step of compositely billing charges for a given food ordering table station based on said food and entertainment selections of said down-line loaded information.

# United States Patent [19]

Dorr

[11] Patent Number: 4,530,067

[45] Date of Patent: Jul. 16, 1985

## [54] RESTAURANT MANAGEMENT INFORMATION AND CONTROL METHOD AND APPARATUS

[75] Inventor: John A. Dorr, Crofton, Md.  
[73] Assignee: Xecutek Corporation, Crofton, Md.  
[21] Appl. No.: 392,426  
[22] Filed: Jun. 25, 1982

### Related U.S. Application Data

[63] Continuation of Ser. No. 242,244, Mar. 10, 1981, abandoned, which is a continuation of Ser. No. 70,522, Aug. 28, 1979, abandoned, which is a continuation of Ser. No. 705,932, Jul. 16, 1976.

[51] Int. Cl.<sup>3</sup> ..... G06F 15/21  
[52] U.S. Cl. .... 364/900; 364/401  
[58] Field of Search ... 364/200 MS File, 900 MS File, 364/401, 405, 464

### [56] References Cited

#### U.S. PATENT DOCUMENTS

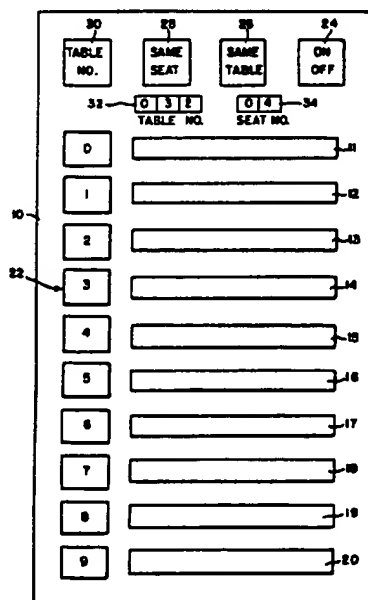
3,267,436	8/1966	Alpert et al. ....	364/900
3,605,089	9/1971	Gray .....	364/900
3,688,276	8/1972	Quinn .....	364/200
3,792,444	2/1974	Spinner .....	364/900
3,899,775	8/1975	Larsen .....	364/900
3,956,740	5/1976	Jones et al. ....	364/900
4,007,443	2/1977	Bromberg et al. ....	364/200
4,025,766	5/1977	Ng et al. ....	364/900
4,090,247	5/1978	Martin .....	364/900
4,107,784	8/1978	Van Bemmelen .....	364/900

Primary Examiner—Thomas M. Heckler  
Attorney, Agent, or Firm—Jim Zegeer

### [57] ABSTRACT

A method and the apparatus for management information and control for restaurants is disclosed. The apparatus includes a plurality of remote units carried by waiters. The remote units are provided with a keyboard, a display and a memory. The remote units may simply be radio frequency transmitters capable of being interrogated, but are preferably radio transmitters and receivers. A central interrogator transceiver periodically interrogates each of the remote units after which the remote units transmit information back to the central interrogator transceiver. The central interrogator transceiver couples the information transmitted thereto to a central processor having a high speed memory therein. The central processor operates on the information received to provide order information to a kitchen display, an order assembly display, a service bar display, a table status display and to a check printer-cash register unit. The order information is also coupled to an inventory control unit for decrementing the various items in inventory by the quantity of items ordered by each customer. A number of computations are made such as the number of particular items ordered, the rate of turnover of customers, quantity of items in inventory, etc. which information is retrievable to give the restaurant management information with regard to the operational characteristics, for example, food flow of the restaurant.

5 Claims, 2 Drawing Figures



US-PAT-NO: 4530067

DOCUMENT-IDENTIFIER: US 4530067 A

TITLE: Restaurant management information and control method and apparatus

----- KWIC -----

US Document Identifier - DID (1):  
US 4530067 A

Application Filing Date - AD (1):  
19820625

TITLE - TI (1):  
Restaurant management information and control method and apparatus

Brief Summary Text - BSTX (5):

In addition, Wolf discloses in U.S. Pat. No. 3,304,416 a business order control system wherein the waitress identification number, the order number of an item and the quantity thereof was keyed into a console which was positioned in a restaurant or into one of a plurality of outside consoles which were positioned outside of the restaurant. A display on the console confirmed to the waitress that the correct code number had been keyed into the console. The information keyed into the console was then coupled to a tape punch unit afterwhich the tape was coupled to a tape reader. The output of the tape reader was coupled to a typewriter which typed the order keyed into the internal or external consoles. At the same time, the output of the tape reader was coupled to a translator storage unit which stored the price and description of the item corresponding to the coded input. The output of the translator was coupled via the tape reader to a calculator which calculated the total bill. The value of the bill was then coupled back to a typewriter for printing out of the bill for the customer.

Detailed Description Text - DETX (20):

Management information and control center 58 is a memory unit for providing such information as the number and identification of the waiters working on a particular day, the rate of turnovers of customers, the flow of food, information such as for example, which items of food sell best on particular days, and at what times thereof. What items of food are most profitable, time variable statistics such as whether the number of customers are increasing or decreasing over a period of time and other such information which may be helpful to the restaurant management in determining how best to serve the customers and minimize cost.

Detailed Description Text - DETX (26):

The waiter then depresses the keys 0,1,0,3 in that order to indicate that the customers in slots 1 and 3 have the same order; it being assumed that these are the customers ordering the martinis. The number 01 will first appear on seat number display 34 and the number 03 will appear on this display. These numbers are transmitted to interrogator transceiver 40 which couples the information to central processor 42.

Detailed Description Text - DETX (40):

Returning to the entree order, assume that the order of the customer seated at seat 4 of table 32 is to be the first entree order of this table to be inputted to central processor 42 and that this customer is ordering from the beef list. As stated above, the waiter after returning to table 32 inputs this table number by depressing table number key 30 to obtain Display A. The waiter then depresses the 3 key of keyboard 22 to inform the central processor that entree order is being given. In response to this input, central processor 22 provides display B and the waiter in this case then depresses the 0 and 4 keys in that order to indicate that the order to be inputted is the order of the customer at seat 4. In response to the seat number information, central processor 42 provides Display F. Since it was assumed that the customer at seat 4 ordered from a beef list, the waiter depresses the 0 key to obtain the list of beef dishes from central processor 42. This list is displayed on displays 11 through 19 or through 20, if only ten items are available. The waiter then depresses the key of keyboard 22 associated with the display that displays the item ordered.

Detailed Description Text - DETX (41):

The person ordering the beef dish will, of course, order specific vegetables and perhaps a salad. Same seat key 28 provides for inputting a complete order of one customer before the order of the next customer at that table is inputted. After depressing the proper key for the beef dish ordered, the waiter depresses same seat button 28. In response to this input, central processor 42, of course, via transceiver 40, again transmits Display A to remote unit 10. The waiter then depresses the 4 key associated with the vegetable display of vegetables are ordered and in response thereto central processor 42 provides remote unit 10 with the list of vegetables on the menu. The waiter then depresses the appropriate key of keyboard 22 to input the vegetable ordered or the appropriate keys of keyboard 22 if more than one vegetable is ordered. If the customer at seat 4 also orders a salad, the waiter again depresses same seat button 28 to again obtain Display A and then depresses the 5 key associated with salad display 16 in Display A. In response to this input central processor will provide a list of salads if more than one is available and included in the same list will be the choice of dressings available. The waiter then depresses the appropriate key or keys of keyboard 22 to input the salad and dressing. If a beverage is also ordered, the waiter again depresses same table button 28 to obtain Display A then depresses the 8 key associated with the beverage display 19 in Display A to obtain the list of beverages available. The appropriate key of keyboard 22 is then depressed to order the beverage. In this manner, one complete main dish order can be inputted before entering the order of the next customer. The order of the next



customer is then taken by depressing same table button 26 to again obtain Display A. The foregoing described steps are repeated to input this customer's order, and so on until the orders of all the customers at table 32 have been inputted.

Detailed Description Text - DETX (53):

Referring again to Display G, if the restaurant has a parking lot and a parking lot attendant, the waiter can notify the parking lot attendant so that he can have their car ready for them when they leave the restaurant. To **identify** the proper automobile, the parking lot would have numbered spaces and the customer would be given a ticket or token with the number of the parking space in which the attendant will park his automobile when the customer enters the restaurant. With Display G being displayed on remote unit 10, the waiter depresses the 3 key for the parking lot attendant, central processor then requests the parking space number which the waiter obtained from the ticket or token. The waiter then depresses the appropriate keys of keyboard 22 of remote unit 10 and this request is forwarded to parking attendant display 56. Note instead of having the waiter notify the parking attendant, the person at check printer cash register unit 46 or the person at receptionist table reservation status display can perform this function, since all the various units of the central system are capable of communicating with central processor 42 as is indicated by the dual arrows in the lines connecting these units to central processor 42.